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Iatrogenic Vascular Injuries in Sweden. A Nationwide Study 1987–2005

Rudström H., Bergqvist D., Ögren M., Björck M. Eur J Vasc Endovasc Surg 2007;35:131-38.

Objectives To study the epidemiology of vascular injuries, with special focus on Iatrogenic Vascular Injuries (IVIs) and time-trends.

Design and methods From the Swedish national vascular registry, Swedvasc, prospectively registered data on vascular injuries during 1987–2005 were analysed and cross-referenced for mortality against the population registry.

Results Of 1853 injuries, 48% were caused by iatrogenic, 29% penetrating and 23% blunt trauma. In the three groups median age was 68, 35 and 40 years, respectively. The annual incidence of procedures for vascular injuries increased from 1.2–1.6 per 100 000 inhabitants and the proportion of IVIs increased from 41 to 51%, during the period. Mortality was higher after IVI (4.9%) compared to non-IVI (2.5%). Patients with IVI also had more co-morbidities; 58% cardiac disease, 44% hypertension, and 18% renal dysfunction.

Among 888 IVIs, right femoral arterial injury was the most frequent (37%). The most common vascular reconstruction was direct suture (39%) followed by by-pass or interposition graft (19%, of which prosthetics were used in over half the cases). Endovascular repair increased from 4.6% to 15% between 1987 and 2005.

Conclusions Vascular injuries, in particular iatrogenic ones, appear to be increasing. Iatrogenic injuries affect vulnerable patients with co-morbidities and are associated with a high mortality.

Outcome after Endografting in Small and Large Abdominal Aortic Aneurysms: A Metanalysis

De Rango P., Cao P., Parlani G., Verzini F., Brambilla D. Eur J Vasc Endovasc Surg 2007;35:162-72.

Aim To compare the results of endovascular repair (EVAR) in large and small (diameter <5.5 cm) abdominal aortic aneurysms (AAA).

Methods A systematic review was performed to identify studies comparing the outcomes after EVAR of large and small aneurysms. Outcomes considered were: risk of death (perioperative, all cause, aneurysm-related), ruptures, and complications (conversion, reintervention). Weighted pooled estimates of outcomes in patients with small versus large aneurysms were calculated. The inverse variance method was used (random-effect model). Subgroup analyses by a follow-up longer or shorter than 24 months were performed.

Results Five studies, with published and unpublished data, totallying 7,735 patients, were included. Overall, the weighted pooled estimates were: OR 0.68; 95% CI 0.51–0.90 for operative mortality, OR 0.77; 95% CI 0.69 to 0.86 for all cause mortality, OR 0.58; 95% CI 0.40 to 0.87 for aneurysm-related mortality and OR 0.61; 95% CI 0.47 to 0.79 for rupture in favour of small AAA group. Pooled estimates were not influenced by follow-up length. Conversion and reintervention rates were not significantly lower for small AAA.

Conclusions EVAR in small versus large AAA might be associated with lower operative mortality, aneurysm-related mortality and aneurysm rupture. Better evidence is needed to support these suggestions.

Surgical Treatment Result of Abdominal Aortic Aneurysm in Behçet's Disease

Kwon T.-W., Park S.-J., Kim H.-K., Yoon H.-K., Kim G.-E., Yu B. Eur J Vasc Endovasc Surg 2007;35:173-80.

Objective We report our surgical treatment results of abdominal aortic aneurysm (AAA) in Behçet's disease patient.

Materials and methods Between September 1998 and June 2006, the authors have performed 21 procedures for AAA in 12 patients with Behçet's disease. Male to female sex ratio was 3:1 and mean age was 34 years old. Behçet's disease was diagnosed clinically using criteria of International Study Group for Behçet's Disease (1990). Retrospective analysis was made.

Results There were six infrarenal, five suprarenal, and one double (suprarenal and infrarenal)AAA. Six graft interposition, six patch closure, and one stent-graft insertion were performed (one graft interposition and one patch closure were simultaneously performed for double AAA). Eight recurrent aneurysms were noted in six (50%) patients. Four stent-graft insertion, two patch closures, one graft interposition and one explothoracotomy only were performed for recurrent aneurysms. Overall recurrence rate of 21 procedures was 38.1%; 14.3% for graft interposition, 62.5% for patch closure, and 40% for stent-graft insertion.

Conclusion Though the resection and graft interposition is technically difficult in many occasions, it should be considered as the procedure of choice for abdominal aortic aneurysm in Behçet's disease. Endovascular interventions may be one of the treatment modality but the result needs further long-term follow-up.

Thoracoabdominal Aortic Aneurysm Repair in Patients with Marfan Syndrome

Mommertz G., Sigala F., Langer S., Koeppel T.A., Mess W.H., Schurink G.W.H., Jacobs M.J. Eur J Vasc Endovasc Surg 2007;35:181-86.

Objective We assessed the surgical outcome of descending thoracic aortic aneurysm repair (DTAA) and thoracoabdominal aortic aneurym (TAAA) repair in patients with Marfan syndrome.

Methods During a six year period, 206 patients underwent DTAA and TAAA repair. In 22 patients, Marfan syndrome was confirmed. The median age was 40 years with a range between 18 and 57 years. The extend of the aneurysms included 6 DTAA (1 with total arch, 2 with distal hemi-arch), 11 type II TAAA (2 with total arch, 3 with distal hemi-arch), 4 type III and one type IV TAAA. All patients suffered from previous type A ($n = 6$) or type B ($n = 16$) aortic dissection and 15 already underwent aortic procedures like Bentall ($n = 7$) and ascending aortic replacement ($n = 8$). All patients were operated on according to the standard protocol with cerebrospinal fluid drainage, distal aortic and selective organ perfusion and monitoring motor evoked potentials. In patients undergoing simultaneous arch replacement (via left thoracotomy), transcranial Doppler and EEG assessed cerebral physiology during antegrade brain perfusion. In four patients circulatory arrest under moderate hypothermia was required.

Results In-hospital mortality did not occur. Major postoperative complications like paraplegia, renal failure, stroke and myocardial infarction were not encountered. Mean pre-operative creatinine level was 125 mmol/L, which peaked to a mean maximal level of 130 and returned to 92 mmol/L at discharge. Median intubation time was 1.5 days (range 0.33–30 days). Other complications included bleeding requiring surgical intervention ($n = 1$), arrhythmia ($n = 2$), pneumonia ($n = 2$) and respiratory distress syndrome ($n = 1$). At a median follow-up of 38 months all patients were alive. Using CT surveillance, new or false aneurysms were not detected, except in one patient who developed a visceral patch aneurysm six years after open type II repair.

Conclusion Surgical repair of descending and thoracoabdominal aortic aneurysms provides excellent short- and mid-term results in patients with Marfan syndrome. In this series, a surgical protocol with cerebrospinal fluid drainage, distal aortic and selective organ perfusion and monitoring motor evoked potentials resulted in low morbidity and absent mortality. These outcomes of open surgery should be considered when discussing endovascular aneurysm repair in Marfan patients.

Retrojugular versus Ventrojugular Approach to Carotid Bifurcation for Eversion Endarterectomy: A Prospective Randomized Trial

Stehr A., Scodacek D., Wustrack H., Steinbauer M., Töpel I., Pfister K., Kasprzak P.M. Eur J Vasc Endovasc Surg 2007;35:190-95.

Objectives The aim of this prospective randomized study was to demonstrate the comparability of retrojugular access for carotid eversion endarterectomy compared to the conventional ventrojugular procedure.

Patients and methods Due to the expected minor and major complication rate of 5% in patients undergoing carotid surgery, a patient cohort of 600 study patients was planned. All patients underwent standard preoperative and postoperative assessment including clinical investigation and fiberoptic laryngoscopy. The 6 month follow-up examination included an evaluation of patient contentment, a duplex scan, clinical investigation and a fiberoptic laryngoscopy.

Results After the first interim evaluation of 101 patients, the study was stopped because of a significant increase in temporary ipsilateral vocal cord motility dysfunction in the retrojugular access group (31% vs. 6%, $p = 0.0014$). This early postoperative impairment was, however, not statistically significant at the follow-up examination at 6 months (2.4% vs.